

Reply Under 37 C.F.R. § 1.116
Expedited Procedure
Technology Center 3700

Application No.: 10/572,576
Art Unit: 3723

REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars.

1. Priority

The applicants respectfully request acknowledgement of the claim for priority to Japanese application no. 2003-350331, filed on October 9, 2003, in the next Office communication. A claim for priority was timely filed on March 17, 2006 via listing of the Japanese application no. 2003-350331 on the Application Data Sheet, and the corresponding filing of the certified copy of the priority document with the International Bureau.

2. Rejection of claims 1-14 under 35 U.S.C. § 102(b) as being anticipated by U.S. patent no. 6,095,509 (*Yonezawa*)

Reconsideration of this rejection is respectfully requested, on the basis that the *Yonezawa* patent fails to disclose each and every recited element of claims 1 and 9. The remaining claims depend from either claim 1 or 9, and are therefore patentable as containing all of the recited elements of claims 1 or 9, as well as for their respective recited features.

By way of review, the embodiment of pending claim 1 requires a positioning apparatus having a plug member projected from a first block and inserted into a positioning hole formed in a second block. A plurality of slide portions that are opposed to each other in a second radial direction across the plug member are arranged around the plug member in a manner so as to be movable in a first radial direction that is substantially orthogonal to the opposed second radial direction. A diametrically expandable and contractible annular pressing member is arranged around an outer periphery of the slide portions. A drive arrangement drives the slide portions to diametrically expand the pressing member in the second radial direction and to press the pressing member against a peripheral surface of the positioning hole,

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wherein the slide portions are moved in the first radial direction with respect to the plug member.

The embodiment of pending claim 9 similarly requires a positioning apparatus having a plug member projected from a first block and inserted into a positioning hole formed in a second block. A plurality of slide portions that are opposed to each other in a second radial direction across the plug member are arranged around the plug member in a manner so as to be movable in a first radial direction that is substantially orthogonal to the opposed second radial direction. A drive arrangement drives the slide portions to diametrically expand in the second radial direction and to press against a peripheral surface of the positioning hole, wherein the slide portions are moved in the first radial direction with respect to the plug member.

As discussed in detail during the interview of September 17, 2008, an exemplary illustration of an embodiment according to pending claim 1 is shown in Figs. 2 and 3 of the application as originally filed. In Figs. 2 and 3, the plurality of slide portions is identified as elements 61, which are opposed to each other in a second radial direction D2 across a plug member 12. The slide portions 61 have inner slide surfaces 63 that cooperate and engage outer slide surfaces 64 on the plug member 12. With this configuration, as shown in Fig. 3, the slide portions 61 can move in the first radial direction D1, orthogonal to the second radial direction D2, in order to accommodate misalignment between the axes of a positioning hole 5 and the plug member 12.

Thus, it seems clear that the second radial direction is the opposed direction, across the plug in which the plurality of slide portions is arranged. Therefore, the comment that it is not clear what the recitation “second radial direction” means in the Office action on page 2, item 5b is not fully understood.

Further, with respect to claim 1, the slide portions include inclined outer surfaces 13, which cooperate with a drive mechanism to cause the pressing member

(sleeve 15) to diametrically expand (via tapered engagement of inner inclined surfaces 17, which engage the inclined outer surfaces 13 of the slide portions 61).

In contrast to both pending claims 1 and 9, the *Yonezawa* patent fails to disclose at least a plurality of slide portions that are opposed to each other in a second radial direction across the plug member and that are arranged around the plug member in a manner so as to be movable in a first radial direction that is substantially orthogonal to the opposed second radial direction, as is required by both claims 1 and 9.

The *Yonezawa* patent discloses a clamping apparatus that has a pull rod 12 having a tapered outer peripheral surface 12a (abstract; col. 1, lines 39-41). When the pull rod 12 is driven towards a base end, the tapered outer peripheral surface 12a causes an engaging member 14 to move to a radially outward engaging position X (col. 1, lines 39-42). Similarly, when the pull rod 12 is driven toward a leading end, the engaging member 14 is moved to a radially inward disengaging position Y (col. 1, lines 46-49). A plurality of engaging members 14 can be provided (col. 2, lines 2-6).

On page 2, the Office action identifies the tapered outer peripheral surface 12a as corresponding to the recited plurality of slide portions. However, the tapered outer peripheral surface 12a is a single surface, and cannot be considered to be a plurality of slide portions, as recited in claims 1 and 9.

Furthermore, the tapered outer peripheral surface 12a does not move both in an opposed second radial direction and in a first radial direction substantially orthogonal to the opposed second radial direction, as is required by pending claims 1 and 9. Instead, the tapered outer peripheral surface 12a merely moves vertically up and down. Thus, the tapered outer peripheral surface 12a cannot be considered to be a plurality of slide portions, as recited in claims 1 and 9.

Turning to the collet 13 provided on the tapered outer peripheral surface 12a of the pull rod 12, and as shown in Figs. 1 and 2, the collet is an integrally formed

member, and thus cannot be considered to be a plurality of slide portions, as recited in claims 1 and 9.

Further, as shown in Figs. 1 or 2, at a time of clamping, if the axis of a hole 2 of a work piece 1 and the axis of the pull rod 12 are misaligned with each other, the tapered outer peripheral surface 12a of the pull rod 12 causes an engaging member 14 provided on the collet 13 to move outward in a radial direction so as to contact the inner peripheral surface of the hole 2 of the work piece 1. The result of this arrangement is that a reaction force causes the collet 13 (and the engaging member 14) and the pull rod 12 to move inward in the radial direction. This then cancels out the misalignment between the hole 2 and the pull rod 12.

In other words, at the time of the clamping operation, the direction in which the collet 13 (and the engaging member 14) is moved is the radially inward and outward direction only, which is in contrast to the plurality of slide portions that move both in an opposed second radial direction and in a first radial direction substantially orthogonal to the opposed second radial direction, as is required by pending claims 1 and 9. Thus, the collet 13 (and the engaging member 14) cannot be considered to be a plurality of slide portions, as recited in claims 1 and 9.

Turning to the engaging member 14 as shown in Figs. 12 or 13, at a time of clamping, the tapered outer peripheral surface 12a of the pull rod 12 causes the engaging member 14 to move outward in the radial direction so as to contact the inner peripheral surface of the hole 2 of the work piece 1, and a reaction force acts onto the engaging member 14 from the inner peripheral surface of the hole 2 (col. 9, lines 53-56). The reaction forces then cause the engaging member 14, the pull rod 12, and the annular member 13 to move inward in the radial direction.

In other words, at the time of the clamping operation, the direction in which the engaging member 14 is moved is the radially inward and outward direction only, which is in contrast to the plurality of slide portions that move both in an opposed second radial direction and in a first radial direction substantially orthogonal to the

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opposed second radial direction, as is required by pending claims 1 and 9. Thus, the engaging member 14 cannot be considered to be a plurality of slide portions, as recited in claims 1 and 9.

Thus, for the reasons discussed above, the *Yonezawa* patent fails to disclose at least a plurality of slide portions that are opposed to each other in a second radial direction across the plug member are arranged around the plug member in a manner so as to be movable in a first radial direction that is substantially orthogonal to the opposed second radial direction, as is required by both claims 1 and 9.

Accordingly, withdrawal of this rejection is respectfully requested.

As mentioned above, applicants submit that independent claims 1 and 9 are patentable and therefore, claims 2-8 and 10-14, which depend from either claim 1 or 9, are also considered to be patentable as containing all of the elements of claims 1 or 9, as well as for their respective recited features.

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3. Conclusion

In view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that every pending claim in the present application be allowed and the application be passed to issue.

Please charge any additional fees required or credit any overpayments in connection with this paper to Deposit Account No. 02-0200.

If any issues remain that may be resolved by a telephone or facsimile communication with the applicants' attorney, the examiner is invited to contact the undersigned at the numbers shown below.

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Respectfully submitted,
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